

Book reviews

Foetus into Man: Physical Growth from Conception to Maturity. By J. M. Tanner. (Pp. 250; illustrated + tables. £7.95 hardback, £4.50 paperback.) Open Books: London. 1978.

To describe the physical growth and development of children in a manner that is stimulating to the biologist and the non-technical general reader alike, must have been a difficult undertaking but the author has succeeded magnificently. The subject matter is at the crossroads of many disciplines, thus requiring a broadly-based approach. There are chapters not only on fetal growth, sexual differentiation, the growth curve and puberty, but also on cellular mechanisms, tissue and organ growth, and the relevant endocrinology. However, there is total coherence, and several themes, including reference to Darwinian theory, recur throughout.

Perhaps the best chapter is that on the interaction of heredity and environment in the control of growth, for which data have been carefully selected and interestingly analysed, with emphasis on the problem of malnutrition. For paediatricians, the chapters on puberty, early and late maturation, and standards of normal growth, are of great practical importance; a clear outline of the normal variations of pubertal development is useful. I wondered if a more specific reference should have been made to the possible role of the pineal gland in the control of the onset of puberty, but it is inevitable that the more specialised reader will complain that a particular section was not expanded and that he will disagree with some points of interpretation. However, he will be educated by finding those concepts with which he is familiar set in a much wider context.

All readers will find themselves drawn from one chapter to the next by fascinating items of information which make the book so readable. For example—did you know that, in one study, shorter girls more often married men in manual jobs, that the correlation between dental and bone age at a given chronological age is only 0.4, that the shape of the human growth curve is shared only by other primates, and that boys in certain boarding schools

grew more poorly during term than in the holidays? In the closing chapters an outline is briefly given on some clinical growth disorders and, at considerable length, a 'do-it-yourself' kit is produced for parents, teachers, and health visitors to enable them to estimate the ultimate height of a child and to determine whether growth is normal. Once more the author attempts, for the best of reasons, to seduce us from the Gregorian to the Tannerian decimal calendar!

It is a short book of some 250 pages, tightly argued, lucidly written, comprehensively illustrated, and with an excellent bibliography. Professor Tanner, uniquely qualified to write such a book by the outstanding contributions he has made to the study of human growth and to child health, has produced an account which is compulsive reading for the paediatrician and which should be compulsory reading for the medical student.

D. A. PRICE

Human Growth: volume 1, Principles and Prenatal Growth; volume 2, Postnatal Growth. Edited by F. Falkner and J. M. Tanner. (Pp. 634 each volume; illustrated + tables. £24.75 each volume, hardback.) Baillière Tindall: London. 1979.

These are the first two volumes of a 3-volume comprehensive textbook about human growth from conception to adult life edited by 2 well-known authorities, one from each side of the Atlantic. Of the 21 chapters in vol. 1, 4 are about developmental biology including changes with age in biochemical constitution and the way the body handles drugs, 3 consider the methodology of growth studies, 4 are on the genetics of biochemical, intrauterine, and postnatal growth, and the rest are about aspects of intrauterine growth including the placenta. Vol. 2 is concerned with postnatal growth. It begins with chapters on cellular growth and on measuring techniques. These are followed by chapters on the pattern and control of growth before and during puberty, and a series on the growth of individual tissues including muscle, fat, bone, and teeth. Rather surprisingly the book ends

with 2 chapters [about low birthweight babies.

Each chapter is written by a different author, altogether in the three volumes over 60 from 10 countries. This leads to wide variations in style and aims; some chapters are very detailed reviews with many references—for example those on biochemical development and perinatal endocrinology—while others are less comprehensive; some present new information, but a few chapters are poor, unintelligible, or boring. Although variation is good, it is a pity that some chapters do not have a summary, that some subjects—for example the effect of smoking in pregnancy and the maternal deprivation syndrome—have slipped between chapters and almost disappeared, and that the index which is large is not more comprehensive. But the books are pleasing, of reasonable size, and well produced and illustrated. As a series of essays related to growth, they are fascinating and instructive. If you want to know why the newborn hippopotamus is larger than the newborn human baby, or the effects of swimming on bone age, or the male/female ratio for lean body mass, or thousands of other facts not easy to find elsewhere, these books will help.

But are they needed? The great interest in the biology of human growth during the last decade has led to a massive increase in knowledge and there is a place for such a scholarly and detailed review of the subject for the clinician and the scientist concerned with the growing human being. Unfortunately the importance of growth makes it a subject with long tentacles and a book like this that aims to be comprehensive must be huge and expensive, and will both overlap greatly with other books dealing with the basic science of childhood and be incomplete. Nevertheless this will be a useful reference book and at least deserves a place in university and paediatric departmental libraries.

The third volume is now available and shares the strengths and weaknesses of the other. It is devoted to neurobiology, with a wide ranging series of chapters on the development of the brain and the relationship between this and behaviour; the effects of variations of nutrition upon growth;

and a final scholarly chapter on the history of growth studies.

J. M. PARKIN

Maternal Nutrition and Child Health. By D. R. Shanklin and J. Hodin. (Pp. 205; illustrated + tables. \$14.75 hardback.) Thomas: Springfield, 1979.

Whether maternal nutrition during pregnancy and lactation has any effect that matters on fetal growth and postnatal development remains a subject for serious debate. No one disputes the fact that birthweights are reduced by about 10% during acute severe famine (although a fall in birth rate is more noticeable), or that maternal dietary supplementation can raise birthweights by a similar amount in chronically undernourished populations. The argument is whether it matters, and ranges between those for whom the birthweight deficit corresponds to an unimportant deprivation of the luxury of subcutaneous fat, at one extreme, and those who rather vaguely suspect that it may in some way affect brain growth and hence the intellect, at the other. Those of us in relatively affluent countries are additionally faced with the question whether the preponderance of small-for-dates babies in the less privileged social classes may be partly due to an unbalanced maternal diet as well as to smoking, teenage pregnancy, and other correlates of indigence or social delinquency. The answer is by no means clear, and becomes considerably less so when attempts are made to relate disturbances of later child behaviour to smallness-for-dates at birth in babies of undernourished mothers. The myriad of inevitable and interrelated components of poverty and undernutrition defy analysis as causal factors in the genesis of performance deficits among the child victims of such society, so that it will probably never be possible to dissect the nutritional factors away from the remainder, all of which are powerful determinants of substandard human achievement. By the same token, attending to the nutritional deficits in isolation is unlikely to resolve many problems, although some good might accrue where they are severe.

For some of our colleagues, however, the matter is not nearly so complicated. The authors of this book tell us without ambiguity that 'the relationship between nutrition, especially during the prenatal period, and child mental and physical health is demonstrated to be causal and

highly correlated' (sic). Some of the studies indicate that there is less than one chance in a billion that prenatal nutrition does not influence the newborn's health and subsequent mental and physical development. In addition, they say, warming to their theme, 'neurological abnormalities, such as mental retardation, cerebral palsy, and epilepsy, which have traditionally been ascribed basically to genetics or unknown causes, are linked in large part to malnutrition during the most rapid, critical periods of development. A continuum of reproductive casualty, defined as spontaneous abortion, perinatal death, cerebral palsy, epilepsy, mental retardation, hyperkinesis/learning disabilities, and minor neurological disorders, can be caused by varying degrees of prenatal malnutrition'.

The rest of the book contains a highly selected, often misinterpreted, and tediously repetitive review of the literature; and those, like your reviewer, who have been endlessly bombarded with communications from Tom Brewer and the Society for the Protection of the Unborn through Nutrition (SPUN) in spite of begging him to desist, will not be surprised to find in the Foreword that 'the scientific studies reviewed in this work represent the basis for his efforts'. One of the authors turns out to be Executive Director of SPUN.

It would all be good knockout stuff if it were not likely to be taken seriously by the 'allied health professionals' and the senators on Brewer's mailing list, and by other influential people who are without sufficient familiarity with the subject to put the book firmly where it belongs.

JOHN DOBBING

Ultrasound in Pediatrics. Edited by M. Miskin. (Pp. 337; illustrated + tables. \$29.50.) Grune and Stratton: New York, 1979.

Ultrasound provides medicine with a unique noninvasive method of investigation. Unlike other imaging techniques using x-rays it is without radiation hazard.

Ultrasound has made a great impact on obstetrics and it was hoped would be as useful in paediatrics. Unfortunately for children, paediatricians have been slow to accept and to press for its use. Part of the blame lies in the lack of information on the use of ultrasound in children. For

this reason the publication of this book is welcome. It may make those dealing with sick children aware of what may be missing from their own armoury of investigations.

However the book is not entirely relevant to the development of paediatric ultrasound in Europe. There are obvious regional differences in the definition of paediatrics. European doctors might not accept alcoholic pancreatitis and caesarean section scar haematomas as being particularly paediatric problems.

Half of the book is devoted to a fascinating account of cranial ultrasound which is compared with pneumoencephalography. The authors are obviously very experienced but computerised axial tomography has now become so well established as the method of cranial examination that the lack of comparison of ultrasound with CAT will leave readers sceptical of its value.

There follows a short, useful, well-referenced introduction to echocardiography, but with only a passing comment on real time scanning.

Almost one-third of the book is left to cover the abdomen and pelvis. Considering the experience and reputation of the authors, the images are only mediocre and the text contains many factual errors. This is not critical enough of the relative usefulness of ultrasound. However, the 'Reader's Digest style' makes it an easy introduction to this topic and interesting reading despite the irrelevancies and errors.

C. METREVELL

Shorter notice

Smith's Blood Diseases of Infancy and Childhood, fourth edition. Edited by D. R. Miller, H. A. Pearson, R. L. Baehner, and C. W. McMillan. (Pp. 888; illustrated + tables. £34.00 hardback.) Mosby: St Louis, 1978.

The original textbook of pediatric haematology has, inevitably, in this, its 4th edition become a multi-author book. The editors manage to combine basic physiology (for example of erythropoiesis and haemolysis) with comprehensive clinical coverage (as in the excellent chapter on iron metabolism). The result is surprisingly readable and up to date and, despite the price, must be the best buy for a departmental library.

Arch Dis Child First published in 1979, Vol 54, No 7, July 1979, pp 732-733. Copyright © 1979 by British Medical Association. All rights reserved. http://adc.bmj.com/